WHAT IS CLAIMED IS:

1. A designing method for a multi-band electronic circuit having at least one transistor, comprising steps of:

(a) changing a capacitance between the input terminal and the output terminal of said at least one transistor of said electronic circuit; and

(b) obtaining a resonant frequency of said electronic circuit which is switched from a first band to a second band in response to said changed capacitance for switching among multiple bands, wherein each of said first band and said second band is one of a plurality of bands of said resonant frequency.

2. The designing method according to Claim 1, wherein said transistor is a bipolar transistor or a field effect transistor.

3. The designing method according to Claim 2, wherein the input terminal and the output terminal of said bipolar transistor are the base and the collector of said bipolar transistor respectively.

4. The designing method according to Claim 2, wherein the input terminal and the output terminal of said field effect transistor are the gate and the drain of said field effect transistor respectively.

5. The designing method according to Claim 1, wherein said step (a) is achieved by a combination of a switch and a capacitor electrically connected in series, which combination is electrically connected between said input terminal and said output terminal in parallel.

6. The designing method according to Claim 1, wherein said step (a) is achieved by a varactor electrically connected between said input terminal and said output terminal in parallel.

7. A multi-band electronic circuit, comprising:

a transistor;

a first inductor electrically connected to the input terminal of said transistor; and

a variable capacitance component electrically connected between said input terminal and the output terminal of said transistor,

wherein, through changing the capacitance of said variable capacitance component, the resonant frequency of said electronic circuit is switched from a first band to a second band in response to said changed capacitance for switching among multiple bands, wherein each of said first band and said second band is one of a plurality of bands of said resonant frequency.

8. The electronic circuit according to Claim 7, wherein said variable capacitance component is a combination of a switch and a capacitor electrically connected in series, or a varactor.

9. The electronic circuit according to Claim 7, wherein said transistor is a bipolar transistor or a field effect transistor.

10. The electronic circuit according to Claim 9, wherein the input terminal and the output terminal of said bipolar transistor are the base and the collector of said bipolar transistor respectively, and the emitter of said bipolar transistor is electrically connected to a ground.

11. The electronic circuit according to Claim 10, wherein said electronic circuit further comprises a second inductor having one end electrically connected to said emitter of said bipolar transistor and the other end electrically connected to said ground.

12. The electronic circuit according to Claim 9, wherein the input terminal and the output terminal of said field effect transistor are the gate

and the drain of said field effect transistor respectively, and the source of said field effect transistor is electrically connected to a ground.

13. The electronic circuit according to Claim 12, wherein said electronic circuit further comprises a second inductor having one end electrically connected to said source of said field effect transistor and the other end electrically connected to said ground.

14. A multi-band electronic circuit, comprising:

a first transistor having an input electrode, a first electrode electrically connected to a ground, and a second electrode;

a first inductor electrically connected to said input electrode of said first transistor;

a first resistor having one end electrically connected to said second electrode of said first transistor;

a first power supply electrically connected to the other end of said first resistor;

a capacitor having one end electrically connected to said second electrode of said first transistor;

a second transistor having an input electrode electrically connected to the other end of said capacitor, a first electrode electrically connected to said ground and a second electrode;

a second resistor having one end electrically connected to said second electrode of said second transistor;

a second power supply electrically connected to the other end of said second resistor;

a third resistor electrically connected between said input electrode and said second electrode of said second transistor; and

a variable capacitance component electrically connected between said input electrode and said second electrode of said first transistor,

wherein, through changing the capacitance of said variable capacitance component, the resonant frequency of the input impedance looking into said input electrode of said first transistor and said first inductor of said electronic circuit is switched from a first band to a second band in response to said changed capacitance for switching among multiple bands, wherein each of said first band and said second band is one of a plurality of bands of said resonant frequency.

15. The electronic circuit according to Claim 14, wherein said variable capacitance component is a combination of a switch and a capacitor electrically connected in series, or a varactor.

16. The electronic circuit according to Claim 14, wherein said electronic circuit further comprises a second inductor having one end electrically connected to said first electrode of said first transistor and the other end electrically connected to said ground.

17. The electronic circuit according to Claim 14, wherein said first and second transistors are two bipolar transistors or two field effect transistors.

18. The electronic circuit according to Claim 17, wherein said input, first and second electrodes of each of said two bipolar transistors are the base, the emitter and the collector of said bipolar transistors respectively.

19. The electronic circuit according to Claim 17, wherein said input, first and second electrodes of each of said two field effect transistors are the gate, the source and the drain of said field effect transistors respectively.

20. A designing method for an electronic circuit of a multi-band amplifier, wherein said electronic circuit comprises at least one transistor having an input terminal and an inductor electrically connected to said input terminal of said at least one transistor, comprising steps of:

changing a bias of said at least one transistor of said electronic circuit; and

switching the resonant frequency of the input impedance of said at least one transistor and said inductor from a first band to a second band in response to said changed bias for switching among multiple bands,

wherein each of said first band and said second band is one of a plurality of bands of said resonant frequency.

21. The designing method according to Claim 20, wherein said transistor is a bipolar transistor or a field effect transistor.

22. The designing method according to Claim 21, wherein the input terminal of said bipolar transistor is the base of said bipolar transistor.

23. The designing method according to Claim 22, wherein said bias of said bipolar transistor is the base bias current of said bipolar transistor, the collector bias current of said bipolar transistor, the emitter bias current of said bipolar transistor, or the base bias voltage of said bipolar transistor.

24. The designing method according to Claim 21, wherein the input terminal of said field effect transistor is the gate of said field effect transistor.

25. The designing method according to Claim 24, wherein said bias of said field effect transistor is the drain-to-source bias current of said field effect transistor, or the gate bias voltage of said field effect transistor..

26. An electronic circuit for a multi-band amplifier, comprising:

a first transistor having an input electrode, a first electrode electrically connected to a ground, and a second electrode;

an inductor electrically connected to said input electrode of said first transistor;

a first resistor having one end electrically connected to said second electrode of said first transistor;

a first power supply electrically connected to one end of said first resistor;

a capacitor having one end electrically connected to said second electrode of said first transistor;

a second transistor having an input electrode electrically connected to the other end of said capacitor, a first electrode electrically connected to said ground, and a second electrode;

a second resistor having one end electrically connected to said second electrode of said second transistor;

a second power supply electrically connected to the other end of said second resistor; and

a third resistor electrically connected between said input electrode and said second electrode of said second transistor,

wherein, through changing a bias of said first transistor of said electronic circuit, the resonant frequency of the input impedance of said first transistor and said inductor of said electronic circuit is switched from a first band to a second band in response to said changed bias for switching among multiple bands, wherein each of said first band and said second band is one of a plurality of bands of said resonant frequency.

27. The electronic circuit according to Claim 26, wherein said first and second transistors are two bipolar transistors or two field effect transistors.

28. The electronic circuit according to Claim 27, wherein said input, first and second electrodes of each of said two bipolar transistors are the base, the emitter and the collector of said bipolar transistors respectively.

29. The electronic circuit according to Claim 28, wherein said bias of said first bipolar transistor is the base bias current of said bipolar transistor, the collector bias current of said bipolar transistor, the emitter bias current of said bipolar transistor, or the base bias voltage of said bipolar transistor.

30. The electronic circuit according to Claim 27, wherein said input, first and second electrodes of each of said two field effect transistors are the gate, the source and the drain of said field effect transistors respectively.

31. The electronic circuit according to Claim 30, wherein said bias of said first field effect transistor is the drain-to-source bias current of said field effect transistor, or the gate bias voltage of said field effect transistor.